Amendments to the Claims

1. (Currently amended) A chemical sensing device comprising a plurality of nanoparticles, each said nanoparticle comprising:

at least one non-conducting inner layer;

at least one conducting shell layer surrounding said inner layer, wherein the thickness of said shell layer is independent of the radius of said inner layer and is less than the thickness of a shell layer whose properties are described by a bulk dielectric property ~~the bulk electron mean free path~~ of the material comprising the shell layer, and

a scattering surface for inducing surface enhanced Raman scattering.

2. (Original) The sensing device according to claim 1, further including a support.

3. (Original) The sensing device according to claim 2 wherein said support comprises a medium that is permeable to an analyte of interest.

4. (Original) The sensing device according to claim 3 wherein said medium comprises a matrix.

5. (Original) The sensing device according to claim 3 wherein said particles are arrayed on said support.

6. (Original) The sensing device according to claim 3 wherein said medium is chosen from the group consisting of hydrogels, protein gels and polymers.

7. (Original) The sensing device according to claim 1, further including at least one biomolecule conjugated to said scattering surface.

8. (Original) The composition of claim 7 wherein at least one of said surface or said biomolecule has an affinity for an analyte of interest.

9. (Original) The method of claim 8 wherein said biomolecule is chosen from the group consisting of antibodies, antigens, proteins, peptides, oligonucleotides and polysaccharides and enzymes.

10. (Original) The sensing device according to claim 1, further including a reporter molecule conjugated to said shell layer.

11. (Original) The sensing device according to claim 1 wherein said particles are optically tuned such that the wavelength of light that is maximally absorbed or scattered by said particles substantially matches the wavelength of light emitted from a predetermined source of said radiation.

12. (currently amended) The sensing device according to claim 11 ~~1~~ wherein said wavelength that is maximally absorbed or scattered also substantially matches the maximum absorbance wavelength of a predetermined analyte when measured in a given medium.

13. (currently amended) The sensing device according to claim 1 wherein said nanoparticles have a ~~defined~~ wavelength absorbance or scattering maximum between 300 nm and 20 μm.

14. (currently amended) The sensing device according to claim 13 wherein said ~~defined~~ wavelength absorbance or scattering maximum is ~~of~~ about 800-1,300 nm.

15. (currently amended) The particle of claim 13 wherein said wavelength ~~particle has an~~ absorbance or scattering wavelength maximum is ~~of~~ about 1,600-1,850 nm.

16. (Original) The particle of claim 1 wherein said shell comprises a metal selected from the group consisting of gold and silver.

17. (Original) The particle of claim 1 wherein said inner layer comprises a material selected from the group consisting of silicon dioxide, gold sulfide, titanium dioxide, polymethyl methacrylate (PMMA), polystyrene and dendrimers.

18. (Original) The particle of claim 1 wherein said inner layer comprises silicon dioxide and said shell comprises gold.

19. (Original) The particle of claim 1 wherein said inner layer comprises gold sulfide and said shell comprises gold.

20 (Original) The particle of claim 1 wherein said nanoparticles has diameters up to about 5 μm, a inner layer diameters of between about 1 nm and about 5 μm, and a shell thicknesses of between about 1 and about 100 nm.

21. (New) A chemical sensing device comprising a plurality of nanoparticles, each said nanoparticle comprising:

at least one non-conducting core layer;

at least one conducting shell layer surrounding said core layer, said shell being such that the absorbance maximum can be controlled by controlling the size of the shell layer , and

a scattering surface for inducing surface enhanced Raman scattering.